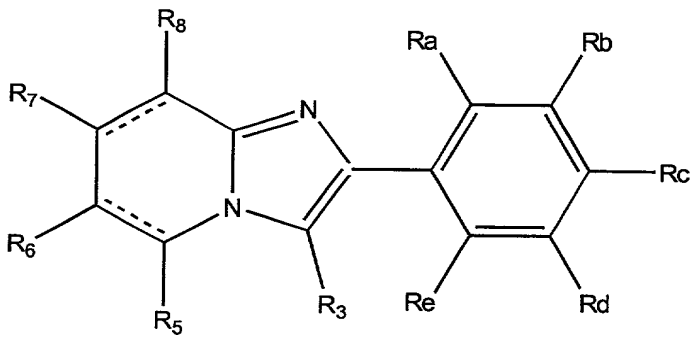
Claims

1. A compound of formula (I)(A):



wherein both dashed lines are a carbon-carbon double bond, or both are absent;

R_3 is H, C_{1-6} alkyl, phenyl, or benzyl;

each of R_5, R_6, R_7 and R_8 is independently H, C_{1-6} alkyl, C_{1-6} alkoxy, halo, or amino;

one of R_a, R_b, R_c, R_d, and R_e is -WYZ and the others are independently selected from H, C_{1-6} alkyl, C_{1-6} alkoxy, halo, and amino;

W is R_9, O-R_9, NR_{10}, -(CO)(O)R_9, -N(R_{10})SO_2-R_9 , -O (CO)R_9, -(CO)NR_{10}, or -N(R_{10})-CO-R_9, wherein R_9 is C_{1-6} alkylene, C_{2-6} alkynylene, C_{2-6} alkenylene, phenylene, or C_{2-5} heterocyclic bivalent radical, and R_{10} is H, C_{1-6} alkyl, C_{2-6} alkynyl, C_{2-6} alkenyl, phenyl, or C_{2-5} heterocyclic radical;

Y is absent, C_{1-6} alkyl, C_{2-6} alkynyl, C_{2-6} alkenyl, or C_{1-6} alkoxy;

Z is C_{2-8} heterocyclic radical with at least one basic nitrogen atom in the ring, optionally including in the ring up to 3 additional heteroatoms or moieties independently selected from O, C=O, N, NH, NG, S, SO, and SO_2, wherein G is R_{15}, COR_{15}, $COOR_{15}$, SO_2R_{15}, SO_2N or CSR_{15}; or Z is $NR_{11}R_{12}$ where each of R_{11} and R_{12} is independently selected from H, C_{1-6} alkyl, phenyl, benzyl, C_{3-8} cycloalkyl, and C_{2-5} heterocyclic radical; and R_{15} is C_{1-6} alkyl, C_{2-6} alkynyl, C_{2-6} alkenyl, C_{3-7} cycloalkyl, or C_{4-7} cycloalkenyl;

provided that where R_c is $WNR_{11}R_{12}$, each of R_{11} and R_{12} being independently selected from C $_{1-6}$ alkyl, then at least one of the following is true: R_b or R_d is alkyl, alkoxy, amino, or halo; the dashed lines represent one carbon-carbon double bond or are absent; R_a or R_e is alkyl, alkoxy, amino, or halo; or W is $-R_9-$, $-NR_{10}-$, $-(CO)(O)R_9-$, $-O(CO)R_9-$, $-(CO)NHR_9-$, or $-N(R_{10})(CO)R_9-$; and further provided that where each of R_a, R_b, R_d, and R_e is H, and W is a straight chain, unsubstituted alkoxy, then at least one of the following is true: Z is cyclic; the dashed lines represent one carbon-carbon double bond or are absent; or R_7 or R_8 is alkyl, alkoxy, halo, or amino;

and further provided that where each of R_a, R_b, R_d, and R_e is H, and W is a straight chain, unsubstituted propoxy, then YZ is not N-piperidyl or N-morpholinyl; and

each of the above hydrocarbyl or heterocyclic groups being optionally substituted with between 1 and 3 substituents selected from C $_{1-3}$ alkyl, halo, hydroxy, C $_{2-5}$ heterocyclic radical, phenyl, and phenyl(C $_{1-3}$ alkyl); and wherein each of the above heterocyclic groups may be attached to the rest of the molecule by a carbon atom or a heteroatom;

or a pharmaceutically acceptable salt, amide, ester, or hydrate thereof.

2. A compound of claim 1, wherein Z comprises piperidyl, morpholinyl, benzyl amino, phenyl amino, substituted benzyl amino, piperazinyl, pyrrolidyl, or a C $_{6-8}$ cycloalkylimino radical.

3. A compound of claim 1, wherein Z is $NR_{11}R_{12}$ where each of R_{11} and R_{12} is independently selected from H, C $_{1-4}$ alkyl, phenyl, and benzyl.

4. A compound of claim 1, wherein W is hydroxy-substituted C $_{2-4}$ alkoxy, C $_{2-4}$ alkoxy, C $_{2-4}$ alkylamino, butenyl, or butynyl.

5. A compound of claim 1, wherein W comprises propoxy, ethoxy, propylamino, or ethylamino; and one of R_7 and R_8 is methyl.

6. A compound of claim 1, where R_7 is methyl.

7. A compound of claim 1 wherein at least one of R_a, R_b, R_d, and R_e is methyl.

8. A compound of claim 1, wherein each of R_5, R_6, R_7 and R_8 is independently H, methyl, ethyl, methoxy, ethoxy, fluoro, or chloro; or wherein one of R_a, R_b, R_c, R_d, and R_e is WZ and the others are independently selected from H, methyl, ethyl, methoxy, ethoxy, fluoro, or chloro; or both.

9. A compound of claim 1, wherein both dashed lines are present to form two carbon-carbon double bonds.

10. A compound of claim 1, wherein both dashed lines are absent.

11. A compound of claim 1, wherein R_a or R_e is methyl, fluoro, or methoxy.

12. A compound of claim 1, provided that where each of R_a, R_b, R_d, and R_e is H, and W is a straight chain, unsubstituted alkoxy, then at least two of the following are true: Z is cyclic; at least one of the dashed lines is absent; and R_7 or R_8 is methyl.

13. A compound of claim 1, provided that where R_c is $WNR_{11}R_{12}$, each of R_{11} and R_{12} being independently selected from C_{1-6} alkyl, then at least two of the following are true: R_b or R_d is methyl, methoxy, ethyl, ethoxy, or halo; or at least one of the dashed

lines is absent; or R_a or R_e is methyl, methoxy, ethyl, ethoxy, fluoro, or chloro; or W is R_9, $-(CO)(O)R_9$, $-N(R_{10})SO_2-R_9$, $-O(CO)R_9$, $-(CO)NHR_9$, $-N(R_{10})-CO-R_9$, or NR_{10}.

14. A compound of claim 1, wherein
R_3 is H or methyl;
each of R_b and R_d is independently H, methyl, or methoxy;
each of R_7 and R_8 is independently H, methyl, fluoro, or chloro;
each of R_5 and R_6 is H;
each of R_a or R_e is independently H, methyl, fluoro, or chloro;
W is C_{2-4} alkoxy, C_4 alkylene, C_4 alkynylene, C_4 alkenylene, $-N(R_{10})SO_2-(C_{1-5}$ alkyl), $-(CO)O-C_{2-3}$ alkyl, $-(CO)NH-(C_{1-3}$ alkyl), $-NH(CO)(C_{1-3}$ alkyl), or $-NH(C_{1-6}$ alkyl); and
Z is pyrrolidyl, piperidyl, morpholinyl, piperazinyl, (piperidyl)-piperidyl, or $NR_{11}R_{12}$ where each of R_{11} and R_{12} is independently selected from H, C_{1-5} alkyl, phenyl, benzyl, C_{3-8} cycloalkyl, and C_{2-5} heterocyclic radical, but at least one of R_{11} and R_{12} is not H; or taken together, R_{11} and R_{12} with the N to which they are attached form a C_{6-8} cycloalkylimino radical.

15. A compound of claim 2, selected from 2-[4-[3-(Piperidino)propylamino]phenyl]-7-methylimidazo[1,2-a]pyridine; (E/Z)-2-[4-[4-Piperidinobut-1-enyl]phenyl]-7-methylimidazo[1,2-a]pyridine; [4-(8-Methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-(2-pyrrolidin-1-yl-ethyl)-amine; [4-(8-Methyl-imidazo[1,2-a]- pyridin-2-yl)-phenyl]-(2-piperidin-1-yl-ethyl)-amine; 2-[4-[4-Pyrrolidinobutyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-[4-[2-(1-Methyl)-2-pyrrolidino]ethoxy-3-methylphenyl]imidazo[1,2-a]pyridine; and N,N-Diethyl-N'-[4-(8-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-propane-1,3-diamine.

16. A compound of claim 2, selected from 2-(4-Piperidinopropoxy-2-methylphenyl)-7-methylimidazo[1,2-a]pyridine; 2-(4-

Cycloheptylaminopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-[4-[4-Piperidinobut-1-ynyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-(4-Pyrrolidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-(4-Piperidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-[4-(3-Piperidin-1-yl-propoxy)-phenyl]-imidazo[1,2-a]pyridine; 2-[4-[4-Pyrrolidinobut-1-ynyl]phenyl]-7-methylimidazo[1,2-a]pyridine; and 2-(4-Piperidinopropoxyphenyl)-8-methylimidazo[1,2-a]pyridine.

17. A compound of claim 2, selected from N,N-Diethyl-N'-[4-(7-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-propane-1,3-diamine; 2-[4-(3-Piperidin-1-yl-propoxy)-phenyl]-5,6,7,8-tetrahydro-imidazo[1,2-a]pyridine; 7-methyl-2-[2-methyl-4-(3-piperidin-1-yl-propoxy)-phenyl]-5,6,7,8-tetrahydro-imidazo[1,2-a]pyridine; and N,N-Diethyl-N'-[4-(8-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-ethane-1,2-diamine.

18. A compound of claim 16, having the formula 2-(4-Piperidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine.

19. A pharmaceutical composition comprising a compound of formula (I) and a pharmaceutically-acceptable carrier.

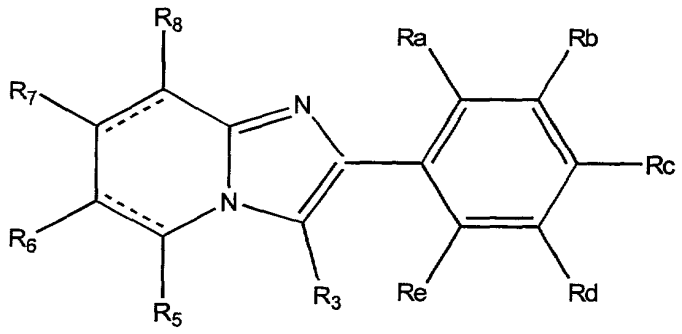
20. A pharmaceutical composition of claim 19, wherein said compound has a formula wherein R_3 is H or methyl; each of R_b and R_d is independently H, methyl, or methoxy; each of R_7 and R_8 is independently H, methyl, fluoro, or chloro; each of R_5 and R_6 is H; each of R_a or R_e is independently H, methyl, fluoro, or chloro; W is C_{2-4} alkoxy, C_4 alkylene, C_4 alkynylene, C_4 alkenylene, -(CO)O-C_{2-3} alkyl, -$N(R_{10})SO_2$-R_9 , -(CO)NH-(C_{1-3} alkyl), -NH(CO)(C_{1-3} alkyl), or NH(C_{1-6} alkyl); and Z is pyrrolidyl, piperidyl, morpholinyl, piperazinyl, (piperidyl)-piperidyl, or $NR_{11}R_{12}$ where each of R_{11} and R_{12} is independently selected from H, C_{1-5}

alkyl, phenyl, benzyl, C_{3-8} cycloalkyl, and C_{2-5} heterocyclic radical, but at least one of R_{11} and R_{12} is not H; or taken together, R_{11} and R_{12} with the N to which they are attached form a C_{6-8} cycloalkylimino radical.

21. A pharmaceutical composition of claim 20, wherein said compound has a formula selected from 2-[4-[3-(Piperidino)propylamino]phenyl]-7-methylimidazo[1,2-a]pyridine; (E/Z)-2-[4-[4-Piperidinobut-1-enyl]phenyl]-7-methylimidazo[1,2-a]pyridine; [4-(8-Methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-(2-pyrrolidin-1-yl-ethyl)-amine; [4-(8-Methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-(2-piperidin-1-yl-ethyl)-amine; 2-[4-[4-Pyrrolidinobutyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-[4-[2-(1-Methyl)-2-pyrrolidino]ethoxy-3-methylphenyl]imidazo[1,2-a]pyridine; N,N-Diethyl-N'-[4-(8-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-propane-1,3-diamine; 2-(4-Piperidinopropoxy-2-methylphenyl)-7-methylimidazo[1,2-a]pyridine; 2-(4-Cycloheptylaminopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-[4-[4-Piperidinobut-1-ynyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-(4-Pyrrolidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-(4-Piperidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-[4-(3-Piperidin-1-yl-propoxy)-phenyl]-imidazo[1,2-a]pyridine; 2-[4-[4-Pyrrolidinobut-1-ynyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-(4-Piperidinopropoxyphenyl)-8-methylimidazo[1,2-a]pyridine; N,N-Diethyl-N'-[4-(7-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-propane-1,3-diamine; 2-[4-(3-Piperidin-1-yl-propoxy)-phenyl]-5,6,7,8-tetrahydro-imidazo[1,2-a]pyridine; 7-methyl-2-[2-methyl-4-(3-piperidin-1-yl-propoxy)-phenyl]-5,6,7,8-tetrahydro-imidazo[1,2-a]pyridine;and N,N-Diethyl-N'-[4-(8-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-ethane-1,2-diamine.

22. A pharmaceutical composition of claim 20, wherein said compound is 2-(4-Piperidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine.

23. A method for treating disorders mediated by the histamine H_3 receptor in a patient, said method comprising administering to the patient a pharmaceutically effective amount of compound of formula (I):



wherein both dashed lines are a carbon-carbon double bond, or both are absent;

R_3 is H, C $_{1-6}$ alkyl, phenyl, or benzyl;

each of R_5, R_6, R_7 and R_8 is independently H, C $_{1-6}$ alkyl, C $_{1-6}$ alkoxy, halo, or amino;

one of R_a, R_b, R_c, R_d, and R_e is -WYZ and the others are independently selected from H, C $_{1-6}$ alkyl, C $_{1-6}$ alkoxy, halo, and amino;

W is R_9, O-R_9, NR_{10}, -(CO)(O)R_9, -N(R_{10})SO_2-R_9 , -O (CO)R_9, -(CO)NR_{10}, or -N(R_{10})-CO-R_9, wherein R_9 is C $_{1-6}$ alkylene, C $_{2-6}$ alkynylene, C $_{2-6}$ alkenylene, phenylene, or C $_{2-5}$ heterocyclic bivalent radical, and R_{10} is H, C $_{1-6}$ alkyl, C $_{2-6}$ alkynyl, C $_{2-6}$ alkenyl, phenyl, or C $_{2-5}$ heterocyclic radical;

Y is absent, C $_{1-6}$ alkyl, C $_{2-6}$ alkynyl, C $_{2-6}$ alkenyl, or C $_{1-6}$ alkoxy;

Z is C $_{2-8}$ heterocyclic radical with at least one basic nitrogen atom in the ring, optionally including in the ring up to 3 additional heteroatoms or moieties independently selected from O, C=O, N,

NH, NG, S, SO, and SO_2, wherein G is R_{15}, COR_{15}, $COOR_{15}$, SO_2R_{15}, SO_2N or CSR_{15}; or Z is $NR_{11}R_{12}$ where each of R_{11} and R_{12} is independently selected from H, C_{1-6} alkyl, phenyl, benzyl, C_{3-8} cycloalkyl, and C_{2-5} heterocyclic radical; and R_{15} is C_{1-6} alkyl, C_{2-6} alkynyl, C_{2-6} alkenyl, C_{3-7} cycloalkyl, or C_{4-7} cycloalkenyl; provided that where R_c is $WNR_{11}R_{12}$, each of R_{11} and R_{12} being independently selected from C_{1-6} alkyl, then at least one of the following is true: R_b or R_d is alkyl, alkoxy, amino, or halo; the dashed lines represent one carbon-carbon double bond or are absent; R_a or R_e is alkyl, alkoxy, amino, or halo; or W is $-R_9-$, $-NR_{10}-$, $-(CO)(O)R_9-$, $-O(CO)R_9-$, $-(CO)NHR_9-$, or $-N(R_{10})(CO)R_9-$; and further provided that where each of R_a, R_b, R_d, and R_e is H, and W is a straight chain, unsubstituted alkoxy, then at least one of the following is true: Z is cyclic; the dashed lines represent one carbon-carbon double bond or are absent; or R_7 or R_8 is alkyl, alkoxy, halo, or amino; and
each of the above hydrocarbyl or heterocyclic groups being optionally substituted with between 1 and 3 substituents selected from C_{1-3} alkyl, halo, hydroxy, C_{2-5} heterocyclic radical, phenyl, and phenyl(C_{1-3} alkyl); and wherein each of the above heterocyclic groups may be attached to the rest of the molecule by a carbon atom or a heteroatom;
or a pharmaceutically acceptable salt, amide, ester, or hydrate thereof.

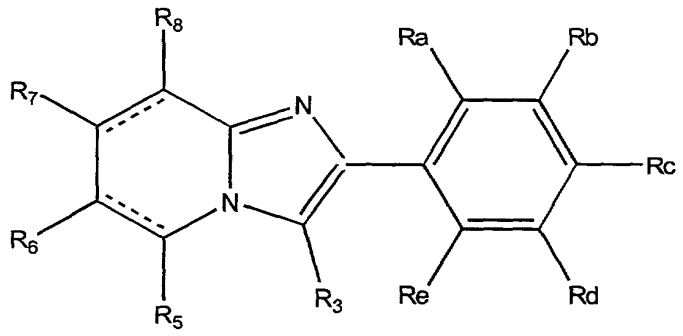
24. A method of claim 23, wherein said compound is selected from 2-[4-[3-(Piperidino)propylamino]phenyl]-7-methylimidazo[1,2-a]pyridine; (E/Z)-2-[4-[4-Piperidinobut-1-enyl]phenyl]-7-methylimidazo[1,2-a]pyridine; [4-(8-Methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-(2-pyrrolidin-1-yl-ethyl)-amine; [4-(8-Methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-(2-piperidin-1-yl-ethyl)-amine; 2-[4-[4-Pyrrolidinobutyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-[4-[2-(1-Methyl)-2-

pyrrolidino]ethoxy-3-methylphenyl]imidazo[1,2-a]pyridine; N,N-Diethyl-N'-[4-(8-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-propane-1,3-diamine; 2-(4-Piperidinopropoxy-2-methylphenyl)-7-methylimidazo[1,2-a]pyridine; 2-(4-Cycloheptylaminopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-[4-[4-Piperidinobut-1-ynyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-(4-Pyrrolidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-(4-Piperidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-[4-(3-Piperidin-1-yl-propoxy)-phenyl]-imidazo[1,2-a]pyridine; 2-[4-[4-Pyrrolidinobut-1-ynyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-(4-Piperidinopropoxyphenyl)-8-methylimidazo[1,2-a]pyridine; N,N-Diethyl-N'-[4-(7-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-propane-1,3-diamine; 2-[4-(3-Piperidin-1-yl-propoxy)-phenyl]-5,6,7,8-tetrahydro-imidazo[1,2-a]pyridine; 7-methyl-2-[2-methyl-4-(3-piperidin-1-yl-propoxy)-phenyl]-5,6,7,8-tetrahydro-imidazo[1,2-a]pyridine; N,N-Diethyl-N'-[4-(8-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-ethane-1,2-diamine; 2-(4-piperidino-propoxyphenyl)-8-methylimidazo[1,2-a]pyridine; and 2-(4-morpholinopropoxyphenyl)-8-methylimidazo[1,2-a]pyridine.

25. A method of claim 23, wherein said compound is 2-(4-Piperidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine.

26. A method for treating a patient with a central nervous system disorder, said method comprising administering to the patient a pharmaceutically-effective amount of a compound of formula (I):

27. A compound of formula (I)(A):



wherein both dashed lines are a carbon-carbon double bond, or both are absent;

R_3 is H, C_{1-6} alkyl, phenyl, or benzyl;

each of R_5, R_6, R_7 and R_8 is independently H, C_{1-6} alkyl, C_{1-6} alkoxy, halo, or amino;

one of R_a, R_b, R_c, R_d, and R_e is -WYZ and the others are independently selected from H, C_{1-6} alkyl, C_{1-6} alkoxy, halo, and amino;

W is R_9, O-R_9, NR_{10}, -(CO)(O)R_9, -N(R_{10})SO_2-R_9 , -O (CO)R_9, -(CO)NR_{10}, or -N(R_{10})-CO-R_9, wherein R_9 is C_{1-6} alkylene, C_{2-6} alkynylene, C_{2-6} alkenylene, phenylene, or C_{2-5} heterocyclic bivalent radical, and R_{10} is H, C_{1-6} alkyl, C_{2-6} alkynyl, C_{2-6} alkenyl, phenyl, or C_{2-5} heterocyclic radical;

Y is absent, C_{1-6} alkyl, C_{2-6} alkynyl, C_{2-6} alkenyl, or C_{1-6} alkoxy;

Z is C_{2-8} heterocyclic radical with at least one basic nitrogen atom in the ring, optionally including in the ring up to 3 additional heteroatoms or moieties independently selected from O, C=O, N, NH, NG, S, SO, and SO_2, wherein G is R_{15}, COR_{15}, $COOR_{15}$, SO_2R_{15}, SO_2N or CSR_{15}; or Z is $NR_{11}R_{12}$ where each of R_{11} and R_{12} is independently selected from H, C_{1-6} alkyl, phenyl, benzyl, C_{3-8} cycloalkyl, and C_{2-5} heterocyclic radical; and R_{15} is C_{1-6} alkyl, C_{2-6} alkynyl, C_{2-6} alkenyl, C_{3-7} cycloalkyl, or C_{4-7} cycloalkenyl;

provided that where R_c is $WNR_{11}R_{12}$, each of R_{11} and R_{12} being independently selected from C_{1-6} alkyl, then at least one of the

following is true: R_b or R_d is alkyl, alkoxy, amino, or halo; the dashed lines represent one carbon-carbon double bond or are absent; R_a or R_e is alkyl, alkoxy, amino, or halo; or W is $-R_9-$, $-NR_{10}-$, $-(CO)(O)R_9-$, $-O(CO)R_9-$, $-(CO)NHR_9-$, or $-N(R_{10})(CO)R_9-$; and further provided that where each of R_a, R_b, R_d, and R_e is H, and W is a straight chain, unsubstituted alkoxy, then at least one of the following is true: Z is cyclic; the dashed lines represent one carbon-carbon double bond or are absent; or R_7 or R_8 is alkyl, alkoxy, halo, or amino; and

each of the above hydrocarbyl or heterocyclic groups being optionally substituted with between 1 and 3 substituents selected from C_{1-3} alkyl, halo, hydroxy, C_{2-5} heterocyclic radical, phenyl, and phenyl(C_{1-3} alkyl); and wherein each of the above heterocyclic groups may be attached to the rest of the molecule by a carbon atom or a heteroatom;

or a pharmaceutically acceptable salt, amide, ester, or hydrate thereof.

28. A method of claim 26, wherein said central nervous system disorder is selected from sleep/wake disorders, arousal/vigilance disorders, dementia, Alzheimer's disease, epilepsy, narcolepsy, eating disorders, motion sickness, vertigo, attention deficit hyperactivity disorder, learning and memory disorders, mild cognitive impairment, and schizophrenia.

29. A method of claim 26, wherein said central nervous system disorder is selected from Alzheimer's disease, epilepsy, eating disorders, learning and memory disorders, migraine, sleep/wake disorders, allergic rhinitis, schizophrenia, mild cognitive impairment, and asthma.

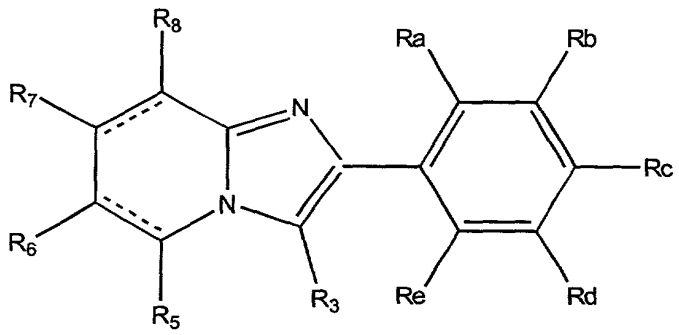
30. A method of claim 26, wherein said compound is selected from 2-[4-[3-(Piperidino)propylamino]phenyl]-7-methylimidazo[1,2-

a]pyridine; (E/Z)-2-[4-[4-Piperidinobut-1-enyl]phenyl]-7-methylimidazo[1,2-a]pyridine; [4-(8-Methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-(2-pyrrolidin-1-yl-ethyl)-amine; [4-(8-Methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-(2-piperidin-1-yl-ethyl)-amine; 2-[4-[4-Pyrrolidinobutyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-[4-[2-(1-Methyl)-2-pyrrolidino]ethoxy-3-methylphenyl]imidazo[1,2-a]pyridine; N,N-Diethyl-N'-[4-(8-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-propane-1,3-diamine; 2-(4-Piperidinopropoxy-2-methylphenyl)-7-methylimidazo[1,2-a]pyridine; 2-(4-Cycloheptylaminopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-[4-[4-Piperidinobut-1-ynyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-(4-Pyrrolidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-(4-Piperidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-[4-(3-Piperidin-1-yl-propoxy)-phenyl]-imidazo[1,2-a]pyridine; 2-[4-[4-Pyrrolidinobut-1-ynyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-(4-Piperidinopropoxyphenyl)-8-methylimidazo[1,2-a]pyridine; N,N-Diethyl-N'-[4-(7-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-propane-1,3-diamine; 2-[4-(3-Piperidin-1-yl-propoxy)-phenyl]-5,6,7,8-tetrahydro-imidazo[1,2-a]pyridine; 7-methyl-2-[2-methyl-4-(3-piperidin-1-yl-propoxy)-phenyl]-5,6,7,8-tetrahydro-imidazo[1,2-a]pyridine; N,N-Diethyl-N'-[4-(8-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-ethane-1,2-diamine; 2-(4-piperidino-propoxyphenyl)-8-methylimidazo[1,2-a]pyridine; and 2-(4-morpholinopropoxyphenyl)-8-methylimidazo[1,2-a]pyridine.

31. A method of claim 27, wherein said compound is 2-(4-Piperidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine.

32. A method of claim 26, wherein said disorder is selected from sleep/wake disorders, arousal/vigilance disorders, attention deficit hyperactivity disorder, and learning and memory disorders.

33. A method for treating a patient with an upper airway allergic response, said method comprising administering to the patient a pharmaceutically-effective amount of a compound of formula (I):



wherein both dashed lines are a carbon-carbon double bond, or both are absent;

R_3 is H, C_{1-6} alkyl, phenyl, or benzyl;

each of R_5, R_6, R_7 and R_8 is independently H, C_{1-6} alkyl, C_{1-6} alkoxy, halo, or amino;

one of R_a, R_b, R_c, R_d, and R_e is -WYZ and the others are independently selected from H, C_{1-6} alkyl, C_{1-6} alkoxy, halo, and amino;

W is R_9, O-R_9, NR_{10}, -(CO)(O)R_9, -N(R_{10})SO_2-R_9 , -O (CO)R_9, -(CO)NR_{10}, or -N(R_{10})-CO-R_9, wherein R_9 is C_{1-6} alkylene, C_{2-6} alkynylene, C_{2-6} alkenylene, phenylene, or C_{2-5} heterocyclic bivalent radical, and R_{10} is H, C_{1-6} alkyl, C_{2-6} alkynyl, C_{2-6} alkenyl, phenyl, or C_{2-5} heterocyclic radical;

Y is absent, C_{1-6} alkyl, C_{2-6} alkynyl, C_{2-6} alkenyl, or C_{1-6} alkoxy;

Z is C_{2-8} heterocyclic radical with at least one basic nitrogen atom in the ring, optionally including in the ring up to 3 additional heteroatoms or moieties independently selected from O, C=O, N, NH, NG, S, SO, and SO_2, wherein G is R_{15}, COR_{15}, $COOR_{15}$, SO_2R_{15}, SO_2N or CSR_{15}; or Z is $NR_{11}R_{12}$ where each of R_{11} and R_{12} is independently selected from H, C_{1-6} alkyl, phenyl, benzyl, C_{3-8}

cycloalkyl, and C_{2-5} heterocyclic radical; and R_{15} is C_{1-6} alkyl, C_{2-6} alkynyl, C_{2-6} alkenyl, C_{3-7} cycloalkyl, or C_{4-7} cycloalkenyl; provided that where R_c is $WNR_{11}R_{12}$, each of R_{11} and R_{12} being independently selected from C_{1-6} alkyl, then at least one of the following is true: R_b or R_d is alkyl, alkoxy, amino, or halo; the dashed lines represent one carbon-carbon double bond or are absent; R_a or R_e is alkyl, alkoxy, amino, or halo; or W is $-R_9-$, $-NR_{10}-$, $-(CO)(O)R_9-$, $-O(CO)R_9-$, $-(CO)NHR_9-$, or $-N(R_{10})(CO)R_9-$; and further provided that where each of R_a, R_b, R_d, and R_e is H, and W is a straight chain, unsubstituted alkoxy, then at least one of the following is true: Z is cyclic; the dashed lines represent one carbon-carbon double bond or are absent; or R_7 or R_8 is alkyl, alkoxy, halo, or amino; and

each of the above hydrocarbyl or heterocyclic groups being optionally substituted with between 1 and 3 substituents selected from C_{1-3} alkyl, halo, hydroxy, C_{2-5} heterocyclic radical, phenyl, and phenyl(C_{1-3} alkyl); and wherein each of the above heterocyclic groups may be attached to the rest of the molecule by a carbon atom or a heteroatom;

or a pharmaceutically acceptable salt, amide, ester, or hydrate thereof.

34. A method of claim 33, wherein said compound is selected from 2-[4-[3-(Piperidino)propylamino]phenyl]-7-methylimidazo[1,2-a]pyridine; (E/Z)-2-[4-[4-Piperidinobut-1-enyl]phenyl]-7-methylimidazo[1,2-a]pyridine; [4-(8-Methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-(2-pyrrolidin-1-yl-ethyl)-amine; [4-(8-Methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-(2-piperidin-1-yl-ethyl)-amine; 2-[4-[4-Pyrrolidinobutyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-[4-[2-(1-Methyl)-2-pyrrolidino]ethoxy-3-methylphenyl]imidazo[1,2-a]pyridine; N,N-Diethyl-N'-[4-(8-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-propane-1,3-diamine; 2-(4-Piperidinopropoxy-2-methylphenyl)-7-methylimidazo[1,2-a]pyridine; 2-(4-

Cycloheptylaminopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-[4-[4-Piperidinobut-1-ynyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-(4-Pyrrolidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-(4-Piperidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine; 2-[4-(3-Piperidin-1-yl-propoxy)-phenyl]-imidazo[1,2-a]pyridine; 2-[4-[4-Pyrrolidinobut-1-ynyl]phenyl]-7-methylimidazo[1,2-a]pyridine; 2-(4-Piperidinopropoxyphenyl)-8-methylimidazo[1,2-a]pyridine; N,N-Diethyl-N'-[4-(7-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-propane-1,3-diamine; 2-[4-(3-Piperidin-1-yl-propoxy)-phenyl]-5,6,7,8-tetrahydro-imidazo[1,2-a]pyridine; 7-methyl-2-[2-methyl-4-(3-piperidin-1-yl-propoxy)-phenyl]-5,6,7,8-tetrahydro-imidazo[1,2-a]pyridine; N,N-Diethyl-N'-[4-(8-methyl-imidazo[1,2-a]pyridin-2-yl)-phenyl]-ethane-1,2-diamine; 2-(4-piperidinopropoxyphenyl)-8-methylimidazo[1,2-a]pyridine; and 2-(4-morpholinopropoxyphenyl)-8-methylimidazo[1,2-a]pyridine.

35. A method of claim 33, wherein said compound is 2-(4-Piperidinopropoxyphenyl)-7-methylimidazo[1,2-a]pyridine.